Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An emissive polymer layer, comprising:

host components; and

at least one of: electron traps or hole traps,

wherein said electron traps reduce electron mobility within said emissive polymer layer or said hole traps reduce hole mobility within said emissive polymer layer,

if the layer includes said electron traps, a first energy barrier to trap electrons between a LUMO level of said host components and a LUMO level of said electron traps is at least a thermal energy of the layer and a second energy barrier to trap holes between a HOMO level of said host components and a HOMO level of said electron traps is less than said thermal energy, and

if the layer includes the hole traps, a third energy barrier to trap holes between a HOMO level of said host components and a HOMO level of said hole traps is at least said thermal energy, and a fourth energy barrier to trap electrons between a LUMO level of said host components and a LUMO level of said hole traps is less than said thermal energy;

wherein upon introduction of holes and electrons into the emissive polymer layer, emission of light occurs primarily due to recombination at the host components.

2. (Currently Amended) The emissive polymer layer of claim 1 wherein the layer includes the electron traps and the first energy barrier is large enough to reduce electron mobility, and the second energy barrier is small enough so that hole mobility is not ~~significantly~~ reduced.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The emissive polymer layer of claim 1 wherein the layer includes the hole traps and the third energy barrier is large enough to reduce hole mobility, and the fourth energy barrier is small enough so that electron mobility is not ~~significantly~~ reduced.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The emissive polymer layer of claim 1, further comprising electron/hole traps, wherein

a fifth energy barrier to trap holes between a HOMO level of said host components and a HOMO level of said electron/hole traps is large enough to reduce hole mobility, and

a sixth energy barrier to trap electrons between a LUMO level of said host components and a LUMO level of said electron/hole traps is large enough to reduce electron mobility.

9. (Previously Presented) The emissive polymer layer of claim 8 wherein

said fifth energy barrier is at least said thermal energy, and

said sixth energy barrier is at least said thermal energy.

10. (Currently Amended) The emissive polymer layer of claim 9 wherein

said fifth energy barrier to trap holes ~~substantially~~ differs from said sixth energy barrier to trap electrons.

11. (Previously Presented) The emissive polymer layer of claim 9 wherein

said fifth energy barrier to trap holes is approximately equal to said sixth energy barrier to trap electrons.

12. (Canceled)

13. (Previously Presented) The emissive polymer layer of claim 8 wherein

a density of said electron traps is high enough to reduce electron mobility,

a density of said hole traps is high enough to reduce hole mobility, and

a density of said electron/hole traps is high enough to reduce electron mobility and hole mobility.

14. (Previously Presented) The emissive polymer layer of claim 13 wherein

said density of said electron traps is less than ten mole percent of said emissive polymer layer,

said density of said hole traps is less than ten mole percent of said emissive polymer layer, and

said density of said electron/hole traps is less than ten mole percent of said emissive polymer layer.

15. (Withdrawn – currently amended) A method ~~to form an~~ of forming the emissive polymer layer of claim 1, comprising:

adding a plurality of traps to a plurality of the host components ~~of said emissive polymer layer~~ to reduce any one of: (1) hole mobility of said emissive polymer layer, (2) electron mobility of said emissive polymer layer, or (3) hole mobility of said emissive polymer layer and electron mobility of said emissive polymer layer.

16. (Withdrawn) The method of claim 15 wherein adding said plurality of traps includes chemically bonding different portions of said plurality of traps to different portions of

said plurality of host components, or mixing a plurality of trap chains with a plurality of host polymer chains, wherein each of said plurality of host polymer chains is a different portion of said plurality of host components and each of said plurality of trap chains is a different portion of said plurality of traps.

17. (Withdrawn – currently amended) The method of claim 15 wherein said plurality of traps are any one of:

(1) a plurality of the hole traps ~~that reduce hole mobility of said emissive polymer layer~~,

(2) a plurality of the electron traps ~~that reduce electron mobility of said emissive polymer layer~~, or

(3) a plurality of electron/hole traps that reduce hole mobility of said emissive polymer layer and electron mobility of said emissive polymer layer.

18. (Withdrawn – currently amended) The method of claim 17 wherein

said plurality of hole traps do not ~~significantly~~ reduce electron mobility of said emissive polymer layer, and

said plurality of electron traps do not ~~significantly~~ reduce hole mobility of said emissive polymer layer.

19. (Withdrawn – currently amended) A method to increase at least one of[[:]] efficiency ~~and~~ or lifetime of the ~~an~~ OLED device of claim 24, comprising:

trapping, within ~~an~~ the emissive polymer layer, at least one of: (1) a portion of a plurality of electrons, ~~and~~ or (2) a portion of a plurality of holes; and

reducing at least one of: (1) electron mobility of said emissive polymer layer by trapping said portion of electrons, ~~and~~ or (2) hole mobility of said emissive polymer layer by trapping said portion of holes.

20. (Withdrawn – currently amended) The method of claim 19 wherein

~~at least one of: (1) electron mobility of said emissive polymer layer and or (2) hole mobility of said emissive polymer layer is reduced until~~ a recombination zone is ~~sufficiently far~~ distanced from [[a]]the cathode so that quenching of emitted light is minimized in comparison to a device without said traps and said recombination zone is ~~sufficiently far~~distanced from an interface between a hole transporting layer and said emissive polymer layer so that at least one of: device lifetime ~~and~~ or efficiency is improved.

21. (Withdrawn – currently amended) The method of claim 19 further comprising

~~insignificantly~~ not changing hole mobility of said emissive polymer layer if only said portion of electrons are trapped; and

~~insignificantly~~ not changing electron mobility of said emissive polymer layer if only said portion of holes are trapped.

22. (Canceled)

23. (Canceled)

24. (Currently Amended) An organic light emitting diode ("OLED") device, comprising:

a substrate;

an anode on said substrate;

a hole transporting layer on said anode;

an emissive polymer layer on said hole transporting layer; and

a cathode on said emissive polymer layer,

wherein said emissive polymer layer includes

host components, wherein upon introduction of holes and electrons into the emissive polymer layer, emission of light occurs primarily due to recombination at the host components; and

at least one of: electron traps or hole traps,

wherein said electron traps reduce electron mobility within said emissive polymer layer or said hole traps reduce hole mobility within said emissive polymer layer, if the emissive polymer layer includes said electron traps, a first energy barrier to trap electrons between a LUMO level of said host components and a LUMO level of said electron traps is at least a thermal energy of the layer and a second energy barrier to trap holes between a HOMO level of said host components and a HOMO level of said electron traps is less than said thermal energy, and if the emissive polymer layer includes said hole traps, a third energy barrier to trap holes between a HOMO level of said host components and a HOMO level of said plurality of hole traps is at least said thermal energy, and a fourth energy barrier to trap electrons between a LUMO level of said host components and a LUMO level of said hole traps is less than said thermal energy.

25. (Currently Amended) The OLED device of claim 24 wherein ~~said electron mobility of said emissive polymer layer or said hole mobility of said emissive polymer layer is reduced until a recombination zone is sufficiently far from a cathode so that quenching of emitted light is minimized and said~~ a recombination zone is ~~sufficiently far~~ distanced from an interface between said hole transporting layer and said emissive polymer layer so that at least one of: device lifetime ~~and~~ or efficiency is improved in comparison to a similar device not having the electron traps or the hole traps.

26. (Canceled)

27. (Canceled)

28. (Original) The OLED device of claim 24 wherein said device is any one of: an OLED pixel or an OLED light source element.

29. (Previously Presented) The emissive polymer layer of claim 8, wherein said HOMO level of said host components is less than said HOMO level of said electron/hole traps and said LUMO level of said electron/hole traps is less than said LUMO level of said host components.

30. (Previously Presented) The emissive polymer layer of claim 1, wherein said HOMO level of said electron traps is greater than said HOMO level of said host components.

31. (Previously Presented) The emissive polymer layer of claim 1, wherein said LUMO level of said host components is greater than said LUMO level of said hole traps.

32. (Currently Amended) The emissive polymer layer of claim 1, wherein said thermal energy is 0.0259 eV at a temperature of 300K.